

A watched pot never boils or does it?

The Subjective or Psychological Experience of Time, Time Dilation, Time Contraction and the True Nature of Time

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07/25/21

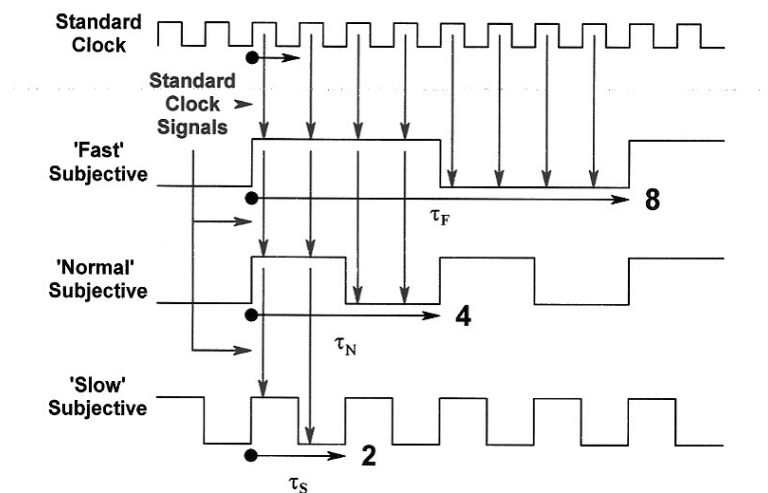


Figure 1. The figure above represents how subjective or psychological time of the brain can lead to the sensation of slow [time dilation] and fast [time contraction] with respect to a normal subjective time as calibrated relative to a standard clock [atomic, etc.]. In this diagram one could use the peaks in the step functions to represent detection of observed events.

The old phrase "a watched pot never boils" is really a statement not about the interaction of vision with boiling but rather an early observation about the psychological experience of time. It is used to mean that time passes very slowly when one is waiting for something to happen if that is the only thing one is thinking about. We will look at the subjective distortion of time associated with observed events as calibrated by the T-computer in our brains. This article is about the psychological time created by our T-computer in our brain. These is also the question of distortion of time due to an observers interaction with a quantum system in which the Heisenberg uncertainty principle for time and energy can come into play. Quantum 'boiling' of a watched pot is looked at as well with respect to the subjective psychological time of an observer.

See the following: [T-computers and the Origins of Time in the Brain September 2007](#)

In the subjective experience of an observer of a pot of water being heated to boiling, the sense of time is that of the brains T-computer processing information at a rate of increased sampling frequency of the signals from the pot into their eyes and on to their brains. This is seen as slowing down of the observed boiling event prelude in the above figure represented by the idealized and oversimplified 'slow' subjective step pattern relative to a standard clock.

In the mind, the internal psychological or subjective time associated with observed events and memories of detected and time labeled events and the brains computed intervals between events are normalized to the consciousness perceived 'now' shifting since we feel time is always normal and not in such a way that we feel that the external worlds activities and our memories are since our 'nows' almost always feel constant and organic body metabolism variations that alter our internal clocks constant. We are generally unaware of interval being distorted since we assume it is the world in which these time effects occur and not in our brain.

Thus we have our subjective or normal time:

$$\tau_{\text{normal}} = \tau_n$$

Which appears to be constant in our consciousness even though it could be fast or slow. The difference is that to normalize these temporal variations in perception to the feeling the world is slowing down or speeding up we have:

$$\tau_{\text{normal}} = \tau_n = C_{\text{fast}}\tau_{\text{fast}} = C_f\tau_f = C_{\text{slow}}\tau_{\text{slow}} = C_s\tau_s$$

Our mind views the subjective state of time intervals between events, both slow and fast, as normal and not due to our brains misperception of internal time distortions so that:

$$C_{\text{fast}} = C_{\text{slow}} = C_n = 1$$

This is where our internal subjective or psychological time errors originate with respect to the external world and external standard clocks. There are many reasons why our perception of time can be distorted, metabolic changes, drugs, excited states, relaxed states and perceptual malfunctions of our senses such as vision.

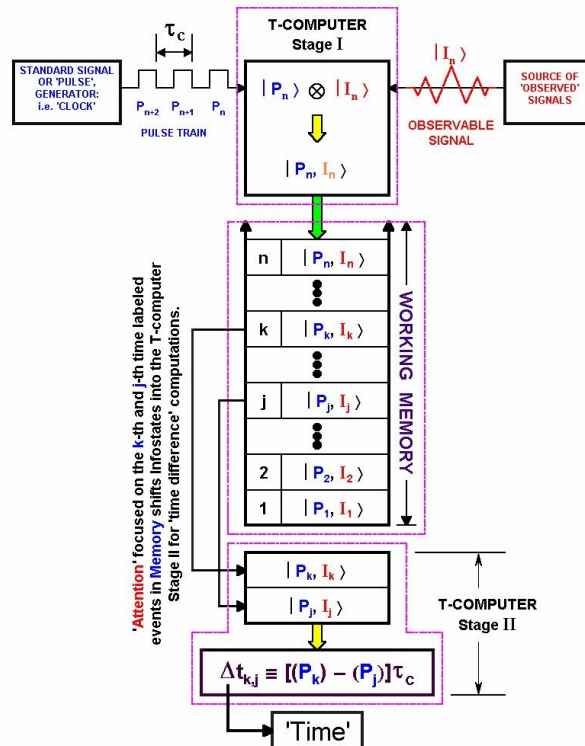


Figure 2. The T-computer of the brains logic [confirmed by fMRI evidence] is illustrated above. The psychological or subjective time results from the processing of the observed signals top right in conjunction with the standard signal of the brains internal clock. The internal clock is subject to metabolic rate changes deviating from normal clock pulses thus time labeling events as closer together or further apart when the time labels are compared from one memory state to a previous memory state to calculate a time label difference and therefore a time between events with respect to the internal normal psychological clock or external standard clock.

In order to understand how time is created from information originating in changing observable systems we need to look at a review of the 7 principles found to be the actual nature of time.

1. Philosophy of Time: time exists as information, NOT as a dimension. Time is as real as information is real.

2. Arrows of Time: Quantum Arrows of Time [QATs] and all other arrows of time only exist as constructions from signal/information flow in causal networks. All arrows of time point from cause [source] to effect [sink] from simple 2-level systems at the quantum scale such as photon emission in atoms up through the cosmological domain through hierarchical scaling of interconnected causal networks at various plateaus of complexity [POCs].

3. Direction of Time: only exists as directions associated with vectors representing arrows of time pointing from cause to effect [source to sink] in the causal networks of the evolving universe.

4. There is no Time to travel 'in', only space [i.e. the vacuum] where the 'now' created by our consciousness is all we can directly experience. Note that the vacuum exists as a physical entity and space is only a map of this fundamental basis for the universe.

"The Map is not the territory" - Alfred Korzybski

5. Our brains T-computer [see figure below] creates 'time' labeled maps of the patterns of observed changes in the configurations of matter in the universe into sequential time stamped and labeled memories. Change is a Fundamental property of the universe, time is not.

"No change then means no time"- J. B. Priestley from 'Man and Time' 1964, page 64

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6. The Problem of Time therefore has been solved by this author using Feynman Clocks, T-computers, and Causal Networks. See the following:

T-computers and the Origins of Time in the Brain September 2007

7. The Vacuum is space and Time is a measure of Changes in the configurations of matter floating on the surface of the vacuum. We attribute dimensions to the vacuum [space] as part of our application of geometry [models] to the real world. The vacuum is much more complex than mere 'empty' space. The vacuum is in fact a multi-vacuum with properties that depend locally on matter and globally on cosmic universality. Cosmological evolution is measured by the maps of change we construct using time as a metric.

Time dilation and contraction [typically in special relativity] are not directly observable since time is not an observable. Energy reconfigurations are observable such as the detection of photons from electron orbital changes in an atom. It is the energy of the system that changes due to motion relative to a detector on internal reconfiguration processes that are time-independent but occur in finite lifetimes of unstable states. The lifetimes of unstable states are intrinsic to the energy of the system and its probability or decay mode transitions -SMH.

Subjective time or psychological time are artifacts of our brains T-computer which enables us to get a survival advantage by forming models of changes in the observed world around us leading to predictions of what will emerge from the evolving universe and how to plan for and deal with probable branching of these emergent realities. The observation of emergent patterns in the changing environments around us can give rise in our brains to model events that clock our lives and develop formal systems like the logic of physical and other scientific theories.

The apparent slowing down or speeding up of our perceptions of the world around us can lead to effects that appear strange unless you have a correct conception of time within which to frame our visions of reality.